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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/524,289 | 08/12/2005 | Ruediger Halfmann | 1454.1596 | 6374 |
| 21171 | 7590 | 06/07/2007 | | |
| STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005 | | | EXAMINER GUZMAN, APRIL S | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2618 | |
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| | | | 06/07/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/524,289 | Applicant(s) HALFMANN ET AL. | |
| | Examiner April S. Guzman | Art Unit 2618 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-33,36 and 37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-32 is/are allowed.
- 6) ☒ Claim(s) 15,16,33,36 and 37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>02/11/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statement submitted on 02/11/2005 has been considered by the Examiner and made of record in the application file.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

Art Unit: 2618

claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 15-16, & 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Harbin et al. (U.S. Patent # 5,701,583)** in view of **Velazquez et al. (U.S. Patent Application Publication # 2001/0003443 A1)**.

Consider **claim 15**, Harbin et al. teach a method for operating a radio system with stations, comprising providing for transmission of data from the first emitting station to a first receiving station in a first spatial radio area; and broadcasting first direction information revealing a first spatial direction in which the first emitting station provides for the transmission of data (Abstract, column 3 lines 52-62, column 4 lines 28-50, column 7 lines 1-12, column 7 lines 39-60, column 10 lines 3-22, and column 10 lines 38-57).

However, Harbin et al. fail to teach a first emitting station equipped with a first directional antenna and providing for transmission of data from the first emitting station to a first receiving station using the first directional antenna.

In the related art, Velazquez et al. teach a first emitting station equipped with a first directional antenna and providing for transmission of data from the first emitting station to a first receiving station using the first directional antenna ([0053], and [0057]-[0059]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Velazquez et al. into the teachings of Harbin

Art Unit: 2618

et al. for the purpose of forming narrow antenna beams to and from desired users and away from undesired users to reduce co-channel interference.

Consider **claim 16, as applied to claim 15 above**, Harbin et al. as modified by Velazquez et al. further teach further comprising: receiving the first direction information at a second emitting station; and taking the first direction information into account for occupation of transmission resources by the second emitting station (Harbin et al. – column 7 lines 1-12, column 7 lines 39-60, column 8 lines 1-13, column 8 lines 24-39, column 10 lines 3-22, and column 10 lines 38-57).

Consider **claim 36**, Harbin et al. teach an emitting station for a radio system also having at least one receiving station, comprising: means for transmission of data to one of the at least one receiving station in a spatial radio area; and means for broadcasting direction information revealing a spatial direction in which the emitting station provides for the transmission of data (Abstract, column 3 lines 52-62, column 4 lines 28-50, column 7 lines 1-12, column 7 lines 39-60, column 10 lines 3-22, and column 10 lines 38-57).

However, Harbin et al. fail to teach at least one directional antenna for transmission of data; at least one omnidirectional antenna for broadcasts; and means for transmission of data to one of the at least one receiving station in a spatial radio area using the at least one directional antenna.

In the related art, Velazquez et al. teach at least one directional antenna for transmission of data; at least one omnidirectional antenna for broadcasts; and means for transmission of data to one of the at least one receiving station in a spatial radio area using the at least one directional antenna ([0047], [0051], and [0056]-[0059]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Velazquez et al. into the teachings of Harbin et al. for the purpose of forming narrow antenna beams to and from desired users and away from undesired users to reduce co-channel interference.

Consider **claim 37**, Harbin et al. teach a radio system, comprising: at least one receiving station; and at least one emitting station, including means for transmission of data to one of the at least one receiving station in a spatial radio area; and means for broadcasting direction information revealing a spatial direction in which the emitting station provides for the transmission of data (Abstract, column 3 lines 52-62, column 4 lines 28-50, column 7 lines 1-12, column 7 lines 39-60, column 10 lines 3-22, and column 10 lines 38-57).

However, Harbin et al. fail to teach at least one directional antenna for transmission of data; at least one omnidirectional antenna for broadcasts; means for transmission of data to one of the at least one receiving station in a spatial radio area using the at least one directional antenna.

In the related art, Velazquez et al. teach at least one directional antenna for transmission of data; at least one omnidirectional antenna for broadcasts; means for transmission of data to one of the at least one receiving station in a spatial radio area using the at least one directional antenna ([0047], [0051], and [0056]-[0059]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Velazquez et al. into the teachings of Harbin et al. for the purpose of forming narrow antenna beams to and from desired users and away from undesired users to reduce co-channel interference.

Art Unit: 2618

Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Harbin et al.** (U.S. Patent # 5,701,583) in view of **Velazquez et al.** (U.S. Patent Application Publication # 2001/0003443 A1) and further in view of **Dam** (U.S. Patent # 6,223,040).

Consider **claim 33**, as applied to **claim 15** above, Harbin et al. as modified by Velazquez et al. teach a method for operating a radio system with stations, including a first emitting station equipped with a first directional antenna, comprising providing for transmission of data from the first emitting station to a first receiving station using the first directional antenna in a first spatial radio area; and broadcasting first direction information revealing a first spatial direction in which the first emitting station provides for the transmission of data.

However, Harbin et al. as modified by Velazquez et al. fail to teach further comprising broadcasting from the first emitting station time interval information about a first time interval provided for transmission of data to the first receiving station.

In the related art, Dam teaches further comprising broadcasting from the first emitting station time interval information about a first time interval provided for transmission of data to the first receiving station (Abstract, column 5 lines 12-29, column 5 lines 37-55, column 6 lines 3-19, and column 6 lines 31-40).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Dam into the teachings of Harbin et al. as modified by Velazquez et al. for the purpose of preventing known sequences in desired signals and known sequences in interfering signals from overlapping in a disturbing way at reception.

Allowable Subject Matter

Claim 17 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Consider **claim 17, as applied to claim 15 above**, the best prior art of record found during the examination of the present application, **Harbin et al. (U.S. Patent # 5,701,583)** in view of **Velazquez et al. (U.S. Patent Application Publication # 2001/0003443 A1)**, fail to teach wherein the second emitting station is equipped with a second directional antenna and provides for transmission of data to a second receiving station using the second directional antenna in a second spatial radio area, wherein said taking into account comprises checking, at the second emitting station based on the first direction information, whether the first and the second spatial radio area overlap at one of the receiving stations, and wherein said method further comprises transmitting data from the first and second emitting stations, only taking place at least partly simultaneously if the first and the second spatial radio areas do not overlap at any receiving stations.

Therefore, claim 17 of the present invention is considered novel and non-obvious over the prior art and consequently is allowed.

Claims 18-32 are allowable because they are dependent on claim 17.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure (see PTO-892 Notice of References Cited).

Art Unit: 2618

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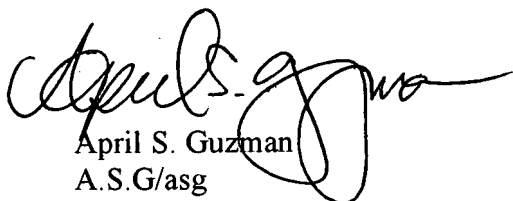
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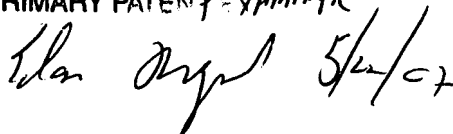
Any inquiry concerning this communication or earlier communications from the examiner should be directed to April S. Guzman whose telephone number is 571-270-1101. The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on 571-272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


April S. Guzman
A.S.G/asg

EDAN ORGAD
PRIMARY PATENT EXAMINER


Edan Orgad 5/15/07

05/15/07